AMENDMENTS TO THE CLAIMS

The claims are presented below with their amendment status and revision marks to indicate any amendments.

1. (CURRENTLY AMENDED) A method of forming an optical communication path, comprising:

forming ~~an~~ a non-cylindrical optical path for carrying optical communications; and

forming an electrically conductive cladding along the optical path for carrying at least one of electrical power, control, and data along the optical path.

2. (ORIGINAL) The method of claim 1 wherein at least a portion of the optical communication path is formed within a channel of a planar layer.

3. (ORIGINAL) The method of claim 2 wherein the channel is created using a selected one of a chemical, mechanical, and a thermal process to remove planar layer material.

4. (ORIGINAL) The method of claim 2 wherein the planar layer is molded with the channel.

5. (ORIGINAL) The method of claim 2 further comprising:

lithographically defining a location of the optical path on a face of the planar layer; and

etching the planar layer along the defined location of the optical path to create the channel.

6. (ORIGINAL) The method of claim 2 further comprising the step of depositing an optical core medium within the channel.

7. (ORIGINAL) The method of claim 2 further comprising:

depositing a first cladding portion within the channel; and

depositing an optical core medium within the channel; and

depositing a second cladding portion over the optical core medium, wherein at least one of the first and second cladding portions is electrically conductive.

8. (ORIGINAL) The method of claim 2 wherein further comprising:

depositing a cladding portion within the channel; and

depositing an optical core medium within the channel, wherein the cladding portion is electrically conductive.

9. (ORIGINAL) The method of claim 2 wherein walls of the channel form the electrically conductive cladding, wherein the planar layer is a selected one of a conductor and semiconductor layer.

10. (CURRENTLY AMENDED) The method of claim 1 wherein the electrically conductive cladding is adjacent a face of the optical path. ~~The method of claim 1 wherein a cross-section of the optical path is substantially non-cylindrical.~~

11. (ORIGINAL) The method of claim 1 further comprising:

providing a first planar layer having a channeled face defining a first channel;

providing a second planar layer having a complementary channeled face defining a second channel; and

placing the first and second planar layers such that the first and complementary second channels oppose each other to form a composite channel defining the optical path.

12. (ORIGINAL) The method of claim 11 further comprising applying a reflective coating to the first and second planar layers, wherein the reflective coating forms at least a portion of the electrically conductive cladding.

13. (ORIGINAL) The method of claim 11 further comprising filling the composite channel with an optical core medium.

14. (ORIGINAL) The method of claim 11 wherein one of the first and second channels is created through a selected one of a chemical, mechanical, and a thermal process.

15. (ORIGINAL) The method of claim 11 wherein channel walls of at least one of the first and second channels form the electrically conductive cladding.

16. (ORIGINAL) The method of claim 1 further comprising:

providing a sheet photosensitive to an optical source of a pre-determined wavelength;

exposing the sheet to an optical path mask in the presence of the optical source to define the optical path lying within the plane of the sheet; and

applying a reflective coating to at least one face of the sheet in an area sufficient to cover one side of the optical path, wherein the reflective coating forms the electrically conductive cladding.

17. (CURRENTLY AMENDED) An optical communication apparatus comprising:

~~an~~ a non-cylindrical optical path for carrying optical communications; and

an electrically conductive cladding disposed along the optical path for carrying at least one of electrical power, control, and data along the optical path.

18. (ORIGINAL) The apparatus of claim 17 further comprising:

a planar layer, wherein at least a portion of the optical path is formed within the planar layer.

19. (ORIGINAL) The apparatus of claim 18 wherein the planar layer further comprises a channel, wherein the optical path is disposed within the channel.

20. (ORIGINAL) The apparatus of claim 19 further comprising an electrically conductive first reflective cladding portion deposited within the channel.

21. (ORIGINAL) The apparatus of claim 19 further comprising an optical core medium disposed within the channel.

22. (ORIGINAL) The apparatus of claim 21 further comprising an electrically conductive reflective cladding portion disposed over the optical core medium.

23. (ORIGINAL) The apparatus of claim 20 further comprising an electrically conductive second reflective cladding portion disposed over the channel.

24. (CURRENTLY AMENDED) The apparatus of claim 17 wherein the electrically conductive cladding is adjacent a face of the optical path. ~~apparatus of claim 17 wherein a cross-section of the optical path is substantially non-circular.~~

25. (ORIGINAL) The apparatus of claim 17 further comprising:

a first planar layer having a channel;

a first reflective layer deposited within the channel; and

a second reflective layer deposited over the channel, wherein the first and second reflective layers co-operate to form the optical path, wherein the first and second reflective layers form the electrically conductive cladding.

26. (ORIGINAL) The apparatus of claim 25 further comprising:

an optical core medium disposed within the channel.

27. (ORIGINAL) The apparatus of claim 17 wherein the optical path is substantially non-cylindrical.

28. (ORIGINAL) The apparatus of claim 17 further comprising:

a first planar layer having a channeled face defining a first channel; and

a second planar layer having a complementary channeled face defining a second channel, wherein the first and second planar layers are relatively disposed such that the first and second channels oppose each other to form a composite channel for the optical path.

29. (ORIGINAL) The apparatus of claim 28 further comprising:

a first mirrored layer deposited along walls of the first channel; and

a second mirrored layer deposited along walls of the second channel, wherein at least one of the first and second mirrored layers forms the electrically conductive cladding.

30. (CURRENTLY AMENDED) The apparatus of claim ~~38~~ 28 further comprising:

an optical core medium disposed within the composite channel.

31. (ORIGINAL) The apparatus of claim 28 wherein at least one of the planar layers is substantially formed from at least one of a conductive layer, a non-conductive layer, and a semiconductor layer.

32. (ORIGINAL) The apparatus of claim 17 further comprising:

a sheet wherein the optical path resides within a plane of the sheet, wherein the optical path is defined by regions of opaqueness within the sheet; and

an electrically conductive reflective coating covering at least one side of the optical path, wherein the electrically conductive reflective coating forms the cladding.

33. (CURRENTLY AMENDED) The ~~method~~ apparatus of claim 32 wherein a cross-sectional width of the optical path is substantially greater than a cross-sectional height of the optical path.

34. (NEW) An optical communication apparatus comprising:

an optical path for carrying optical communications, at least a portion of the optical path formed within a channel of a planar layer; and

an electrically conductive cladding disposed along the optical path for carrying at least one of electrical power, control, and data along the optical path.

35. (NEW) The apparatus of claim 34 further comprising an electrically conductive first reflective cladding portion deposited within the channel.

36. (NEW) The apparatus of claim 34 further comprising an optical core medium disposed within the channel.

37. (NEW) The apparatus of claim 36 further comprising an electrically conductive reflective cladding portion disposed over the optical core medium.

38. (NEW) The apparatus of claim 35 further comprising an electrically conductive second reflective cladding portion disposed over the channel.

39. (NEW) The apparatus of claim 35 further comprising:

a first planar layer having a channel;

a first reflective layer deposited within the channel; and

a second reflective layer deposited over the channel, wherein the first and second reflective layers co-operate to form the optical path, wherein the first and second reflective layers form the electrically conductive cladding.

40. (NEW) The apparatus of claim 35 further comprising:

an optical core medium disposed within the channel.

41. (NEW) The apparatus of claim 35 further comprising:

a first planar layer having a channeled face defining a first channel; and

a second planar layer having a complementary channeled face defining a second channel, wherein the first and second planar layers are relatively disposed such that the first and second channels oppose each other to form a composite channel for the optical path.

42. (NEW) The apparatus of claim 35 further comprising:

a sheet wherein the optical path resides within a plane of the sheet, wherein the optical path is defined by regions of opaqueness within the sheet; and

an electrically conductive reflective coating covering at least one side of the optical path, wherein the electrically conductive reflective coating forms the cladding.

43. (NEW) An optical communication apparatus comprising:

an optical path for carrying optical communications; and

an electrically conductive cladding disposed along and adjacent to a face of the optical path without surrounding the optical path, the electrically conductive cladding for carrying at least one of electrical power, control, and data along the optical path.

44. (NEW) The apparatus of claim 43 further comprising an electrically conductive first reflective cladding portion deposited within the channel.

45. (NEW) The apparatus of claim 43 further comprising an optical core medium forming at least a portion of the optical path.

46. (NEW) The apparatus of claim 43 further comprising:

a first planar layer having a channeled face defining a first channel; and

a second planar layer having a complementary channeled face defining a second channel, wherein the first and second planar layers are relatively

disposed such that the first and second channels oppose each other to form a composite channel for the optical path.

47. (NEW) The apparatus of claim 46 further comprising:

a first mirrored layer deposited along walls of the first channel; and

a second mirrored layer deposited along walls of the second channel, wherein one of the first and second mirrored layers forms the electrically conductive cladding.

48. (NEW) The apparatus of claim 46 further comprising:

an optical core medium disposed within the composite channel.

49. (NEW) The apparatus of claim 43 further comprising:

a sheet wherein the optical path resides within a plane of the sheet, wherein the optical path is defined by regions of opaqueness within the sheet; and

an electrically conductive reflective coating covering one side of the optical path, wherein the electrically conductive reflective coating forms the cladding.

50. (NEW) The apparatus of claim 49 wherein a cross-sectional width of the optical path is substantially greater than a cross-sectional height of the optical path.